

ABSTRACT OF THE DISCLOSURE

A parallel kinematics mechanism is provided for uses such as robotics or machining. The mechanism has various limbs designed as elbow-linkages, at least some of which are actuatable, for moving an end component with multiple degrees of freedom. The mechanism advantageously facilitates an improved workspace-to-footprint ratio and a closed-form solution for the forward kinematics. The mechanism comprises a joint assembly having a plurality of revolute joints for connecting to at least three limbs, the joints having axes which intersect at a common point. In various embodiments of the invention, the end component has three, four, five and six degrees of freedom.